



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Tongbi Jiang

Application No.: 09/484,437

Confirmation No.: 9698

Filed: January 18, 2000

Art Unit: 2813

For: Die attach curing method for semiconductor
device

Examiner: J. M. Mitchell

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF TONGBI JIANG UNDER
37 CFR 1.131

Dear Sir:

I, Tongbi Jiang, declare and state as follows:

1. I reside at 12036 W. Patrina Drive, Boise, Idaho 83713.
2. I am the sole inventor of the subject matter described and claimed in the above-identified U.S. patent application ("the '437 application"), filed on January 18, 2000, as evidenced by the attached copy of the executed Declaration document (Exhibit A).
3. I have reviewed and understand the '437 application, including the currently pending claims (the "Claimed Invention").
4. I first conceived the Claimed Invention covered by the Claimed Invention prior to December 13, 1999, as evidenced by Exhibit B, which is a copy of a Micron Invention Disclosure document. The actual date on this submission has been blacked out, as has any description and/or material not relevant to the conception of the Claimed Invention; however, the date of the Invention Disclosure is prior to December 13, 1999.

Application No.: 09/484,437

Docket No.: M4065.0226/P226

5. Micron Technology Inc. is the assignee of the present application as evidenced by a copy of the Assignment, Exhibit C.

6. The law firm of Dickstein Shapiro Morin & Oshinsky LLP ("Dickstein Shapiro") was assigned to write this application. Soon after Dickstein Shapiro received my invention disclosure (Ex. B), the Dickstein Shapiro Attorney sent a letter enclosing a first draft of the patent application to Ms. Peggy Loyd-Fuster, as evidenced by Exhibit D. The actual date on the correspondence has been blacked out, as has any description and/or material beyond the first conception or not relevant to due diligence of the Claimed Invention; however, the date of the letter is prior to December 13, 1999. The first draft patent application enclosed with the letter has been omitted.

7. Upon receipt of the first draft patent application, I carefully reviewed the first draft patent application, and made several revisions thereto; I forwarded my revisions to Ms. Peggy Loyd-Fuster, who forwarded the revised first draft patent application to the Dickstein Shapiro Attorney, as evidenced by Ex. E.

8. After Dickstein Shapiro received my revisions to the first draft patent application, the Dickstein Shapiro Attorney sent a second letter addressed to me enclosing a second draft of the patent application for my review, as evidenced by Exhibit F. The Exhibit F correspondence also included an assignment and of a Power of Attorney by Assignee. The actual date on the correspondence has been blacked out, as has any description and/or material beyond the first conception or not relevant to due diligence of the Claimed Invention; however, the date of the letter is prior to December 13, 1999. The second draft patent application and other documents enclosed with the letter have been omitted from Exhibit F.

Application No.: 09/484,437

Docket No.: M4065.0226/P226

9. After I forwarded my comments relating to the first draft patent application, I recall becoming extremely busy wrapping up several projects I was involved in at work prior to the typical slow down that occurs during the Holiday Season (i.e., end of December 1999 through the beginning of January 2000). Accordingly, I was unable to immediately review the second draft patent application. I recall spending most of my time during the Holiday Season away from the office and with family and friends. Upon return from the Holidays, I recall quickly starting work on several new projects, and not having time to review the second draft application. Upon returning to the office, I was able to review the second draft patent application, and executed the Exhibit A Declaration on January 11, 2000, and forwarded the executed document to Ms Lisa Boyer (formerly a Patent Assistant at Micron Technology, Inc.).

10. On January 12, 2000, Ms. Lisa Boyer sent a letter (Ex. G) to the Dickstein Attorney enclosing copies of an executed Declaration (Ex. A), an executed Assignment (Ex. C), and a Power of Attorney (Ex. D).

11. On January 18, 2000, the '437 application was filed, as evidenced by Ex. H, which is a copy of a Filing Receipt mailed by the United States Patent & Trademark Office on March 16, 2000.

12. As evidenced by the above, the preparation of the '437 application covering the Claimed Invention was diligently pursued from prior to the reference date of December 13, 1999 to the date of filing (January 18, 2000) of the '437 application.

Application No.: 09/484,437

Docket No.: M4065.0226/P226

All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the above-identified patent.

Date: 6/9/06By: 

Tongbi Jiang

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

DECLARATION FOR PATENT APPLICATION

As the below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

DIE ATTACH CURING METHOD FOR SEMICONDUCTOR DEVICE

The specification of which is attached hereto.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by an amendment, if any, specifically referred to in this oath or declaration.

I acknowledge the duty to disclose all information known to me which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, § 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Not Claimed
_____	_____	_____	<input type="checkbox"/>
(Number)	(Country)	(Filing Date)	
_____	_____	_____	<input type="checkbox"/>
(Number)	(Country)	(Filing Date)	
_____	_____	_____	<input type="checkbox"/>
(Number)	(Country)	(Filing Date)	

I hereby claim the benefit under Title 35, United States Code, § 120/365 of any United States and PCT international application(s) listed below and, insofar as the

subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application:

_____ (Application Serial No.)	_____ (Filing Date)	_____ (Status) (patented, pending, abandoned)
_____ (Application Serial No.)	_____ (Filing Date)	_____ (Status) (patented, pending, abandoned)
_____ (Application Serial No.)	_____ (Filing Date)	_____ (Status) (patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Please address all correspondence to Thomas J. D'Amico of Dickstein Shapiro Morin & Oshinsky LLP located at 2101 L Street NW, Washington, DC 20037-1526. Telephone calls should be made to (202) 785-9700.

Full name of sole inventor: Tongbi Jiang

Inventor's signature: _____

Date: 1/11/00

Residence: Boise, Idaho

Citizenship: ~~China~~ US TB

Post Office Address: 12036 W. Patrino Drive
Boise, Idaho 83713

If ARPA project,
please check below:

INVENTION DISCLOSURE

___ Advanced SRAM
___ BST
___ FED
___ FE RAM
___ NCAICM

98-956

1. INVENTOR(S):

TJIANG *jd*

2. DESCRIPTION

2.1 Title of invention:

Die attach curing method for BGA product

2.2 Brief description:

Using low temperature curing profile to avoid outgassing from the PCB.

2.3 Also attach a complete description, including drawings or sketches and articles relevant to the invention. Legible photocopies of laboratory notebooks are acceptable.

Liquid photoimageable soldermask is the most popular surface finish on the BGA substrate. There are two types of solvent used in the soldermask formulation: Diethylene glycol monoethyl ether acetate, and dipropylene glycol monoethyl ether. Both of them are high boiling temperature solvents (219C and 90C respectively). Heavy aromatic naphtha is typically used as a photoinitiator, which boils at 80-220C range. PCB manufacture normally performs a 1hr @ 150C thermal cure on the soldermask material. This will only allow to drive the low temperature volatile out. We have found out the boards outgassed at above 150C. Outgassing contaminated wirebond pads on the boards which resulted in low bond yield.

Outgassing also induces voids in the die attach adhesive. Voids are potentially entrap moisture, which will fail the package in environmental test.

The onset cure temperature of a die attach adhesive can be controlled by free radical initiators or catalysts. What is proposed here is to use low temperature cure die attach process to minimize the outgassing. Preferably, less than 100C, typically at 80C.

Besides solvent, unreacted monomers or oligomers and photoagents in the boards, low temperature cure process will also reduce moisture caused voiding in the D/A adhesives.

Fig. 1 shows the wirebond pull force of a 80C cured PBGA parts (D170) vs. that of a 125C cured parts (B170).

Fig. 2 shows the radius of curvature data on a variety of samples cured at different temp and time. Note that the higher the cure temperature, the

higher the die stress. High stress is problematic for large and/or thin die package. So the low temp cure process also provide a method of reduction of package stress.

3. INFORMATION CONCERNING CONCEPTION OF INVENTION

3.1 CONCEPTION AND DOCUMENTATION OF THE INVENTION

- a. Identify the date when you first conceived the invention. (If not sure, give the earliest date of which you are sure.)

[REDACTED]

- b. To whom was the idea first described and on what date? (Other than a co-inventor.)

[REDACTED]

- c. Identify the date of the first tangible record such as computer simulation, tape out, drawing or written description. Please specify type and location.

[REDACTED]

3.2 CONCEPTION OF THE INVENTION

- a. Please identify related invention disclosures, patents or other publications describing similar ideas, and other companies working in the same field. Attach copies, if available.

N/A.

- b. What is the closest technology, of which you are aware?

High temp cure (typically 150C for BGA product). Plasma clean prior to w/b.

- c. Identify the advantages of this invention over previous technology.

1. minimizing outgassing from the PCB board material.
2. reducing voiding in the d/a material.
3. may not require cleaning prior to w/b.
4. low stress on die.

3.3 IMPORTANT DATES

- a. Has the invention been disclosed outside the company? NO_
If yes, to whom, when, and in what form?

- [REDACTED]
- b. Have any articles describing your invention been published?
No If yes, list author(s), title of article, publication and date.
 - c. Have any engineering samples been given out? No__ If yes, to whom and on what date?
 - d. Has any product using the invention been sold or offered for sale? No__ If yes, to whom and on what date?

3.4 DISPOSITION OF THE INVENTION

- a. When will (or did) Micron begin use of the invention experimentally?
[REDACTED]
- b. When will (or did) Micron begin production of this invention?

TBD. [REDACTED]

3.5 MISCELLANEOUS INFORMATION

- a. Was the invention developed during a joint development agreement or other contract with an outside company? No__
- b. Please list developmental work outside of the company (including Government proposal or contract).

4. INVENTORS:

Name: Tongbi Jiang

Micron Phone: X82188 Micron Mail Stop: #906

Company Name (VERY IMPORTANT): Dept. Name: Assm.
X Micron Semiconductor, Inc. Dept. #: 200
___ Micron Computer, Inc.
___ Micron Custom Manufacturing Services, Inc.
___ Micron Display Technology, Inc.
___ Micron Communications, Inc.
___ Other _____

Home Address:

12036 W Patrina Dr., Boise, ID 83713

Citizenship: P. R. China

Supervisor: Ed Schrock

Signature: _____

Date: _____

5. WITNESS

If there is only one inventor, a witness should sign and date this disclosure. A witness in this case is a non-inventor who understands the nature of the invention.

(Signature of Witness)

(Date)

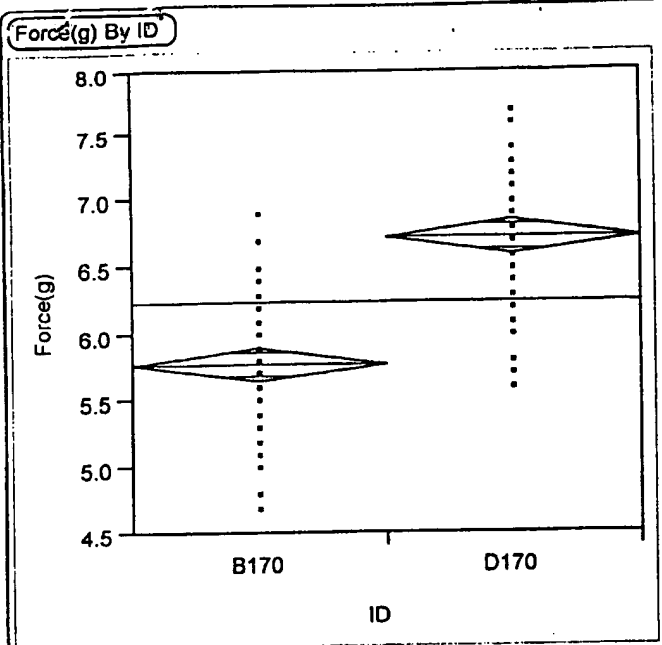
Note: If you have any questions or wish assistance completing this form, please call the Legal/Patent Department, ext. 4527.



Fig. 1
wire pull force data
(w/B at 170°C)

D170: D/A cured @ ~~170°C~~
80°C for 4 hr

B170: D/A cured @
125°C for 1 hr.



Oneway Anova					
Summary of Fit					
RSquare				0.513067	
RSquare Adj				0.508098	
Root Mean Square Error				0.472363	
Mean of Response				6.244	
Observations (or Sum Wgts)				100	
t-Test					
	Difference	t-Test	DF	Prob> t	
Estimate	-0.96000	-10.162	98	<.0001	
Std Error	0.09447				
Lower 95%	-1.14748				
Upper 95%	-0.77252				
Assuming equal variances					
Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Ratio	
Model	1	23.040000	23.0400	103.2598	
Error	98	21.866400	0.2231	Prob>F	
C Total	99	44.906400	0.4536	<.0001	
Means for Oneway Anova					
Level	Number	Mean	Std Error		
B170	50	5.76400	0.06680		
D170	50	6.72400	0.06680		
Std Error uses a pooled estimate of error variance					

M4065.0226

This invention was proposing to use cure temp below 100°C to avoid outgassing from the solder resist and moisture evaporation from the PCB to form void free D/A interface.

Tom Jiang

The material is not unobtainable - I have run an experiment based on QMI 536 material.

low temperature (80°C for 4hrs)

Cured samples have equivalent property as the recommended curing profile (^{samples} 1hr @ 150°C).

Tom

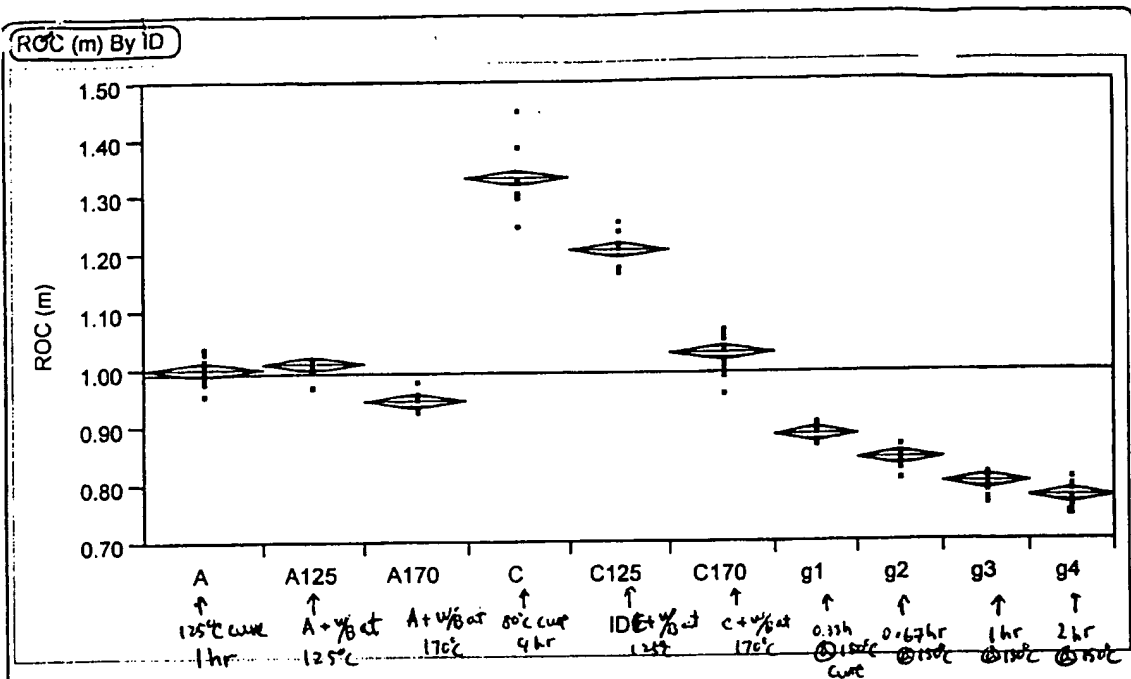


Fig 2.
Stress data

Oneway Anova

Summary of Fit

RSquare	0.977676
RSquare Adj	0.975745
Root Mean Square Error	0.026242
Mean of Response	0.994825
Observations (or Sum Wgts)	114

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	9	3.1366270	0.348514	506.0836
Error	104	0.0716195	0.000689	Prob>F
C Total	113	3.2082465	0.028392	<.0001

Means for Oneway Anova

Level	Number	Mean	Std Error
A	14	1.00071	0.00701
A125	12	1.00833	0.00758
A170	12	0.94583	0.00758
C	12	1.33417	0.00758
C125	12	1.20583	0.00758
C170	12	1.02750	0.00758
g1	10	0.88800	0.00830
g2	10	0.84500	0.00830
g3	10	0.80200	0.00830
g4	10	0.77900	0.00830

Std Error uses a pooled estimate of error variance

ASSIGNMENT AND AGREEMENT

For value received, I, Tongbi Jiang hereby sell, assign and transfer to Micron Technology, Inc., a corporation of the State of Delaware, having an office at 8000 S. Federal Way, Boise, Idaho 83706-9632, U.S.A., and its successors, assigns and legal representatives, the entire right, title and interest, for the United States of America, in and to certain inventions related to an invention entitled DIE ATTACH CURING METHOD FOR SEMICONDUCTOR DEVICE, described in an application for Letters Patent of the United States, executed by me of even date herewith, and all the rights and privileges in said application and under any and all Letters Patent that may be granted in the United States for said inventions; and I also concurrently hereby sell, assign and transfer to Micron Technology, Inc. the entire right, title and interest in and to said inventions for all countries foreign to the United States, including all rights of priority arising from the application aforesaid, and all the rights and privileges under any and all forms of protection, including Letters Patent, that may be granted in said countries foreign to the United States for said inventions.

I authorize Micron Technology, Inc. to make application for such protection in its own name and maintain such protection in any and all countries foreign to the United States, and to invoke and claim for any application for patent or other form of protection for said inventions, without further authorization from me, any and all benefits, including the right of priority provided by any and all treaties, conventions, or agreements.

I hereby consent that a copy of this assignment shall be deemed a full legal and formal equivalent of any document which may be required in any country in proof of the right of Micron Technology, Inc. to apply for patent or other form of protection for said inventions and to claim the aforesaid benefit of the right of priority.

I request that any and all patents for said inventions be issued to Micron Technology, Inc. in the United States and in all countries foreign to the United States, or to such nominees as Micron Technology, Inc. may designate.

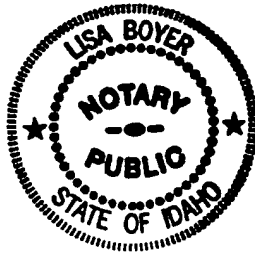
I agree that, when requested, I shall, without charge to Micron Technology, Inc. but at its expense, sign all papers, and do all acts which may be necessary, desirable or convenient in connection with said applications, patents, or other forms of protection.

Tongbi Jiang
Tongbi Jiang

Date: 11/11/00

United States of America)
State of Idaho)ss.:
County of Ada)

On this 11 day of January, 2000, before me personally came Tongbi Jiang, to me known to be the individual described in and who executed the foregoing instrument, and acknowledged execution of the same.



Lisa Boyer
Notary Public

DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP

2101 L Street NW • Washington, DC 20037-1526

Tel (202) 785-9700 • Fax (202) 887-0689

Writer's Direct Dial: (202) 828-2232

E-Mail Address: DAmicoT@DSMO.com

BY FEDERAL EXPRESS

**PRIVILEGED AND CONFIDENTIAL:
ATTORNEY-CLIENT COMMUNICATION**

Ms. Peggy Loyd-Fuster
Micron Technology, Inc.
8000 S. Federal Way
Boise, Idaho 83707-0006

Re: Proposed U.S. Patent Application
Serial No.: Not Yet Assigned
Title: DIE ATTACH CURING METHOD FOR BGA PRODUCT
Inventor: Tongbi Jiang
Your Reference: 98-956
Our Reference: M4065.0226/P226

Dear Ms. Loyd-Fuster:

Enclosed please find three copies of a first draft for Micron's patent application entitled "Die Attach Curing Method for BGA Product." This draft has been prepared based upon the original invention submission. Please have Mr. Jiang review this draft to ensure that it completely and accurately describes the invention.

Please direct any comments on the draft to me or Bill Powell at (202) 775-4798. I trust you will be able to provide any comments within the next ten (10) days, so we can revise the application and get it filed as soon as possible.

If you have any questions, please do not hesitate to call.

Very truly yours,

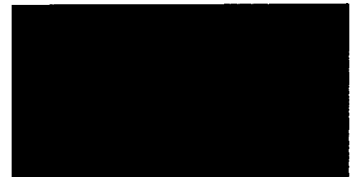


Thomas J. D'Amico

TJD/WEP/cc
Enclosures (3 copies)



Tom D'Amico
Dickstein, Shapiro, Morin
& Oshinsky
2101 L Street N.W.
Washington, D.C. 20037



LUS

Re: Micron Docket # 98-0956
Your Ref. # M4065.0226/P226

Dear Tom:

In accordance with the inventor's request, please find the transformations for the above referenced draft. Please revise as stated and provide me with an amended draft.

Feel free to let me know if you have any questions.

Very truly yours,

A handwritten signature in cursive script that reads "Peggy".

Peggy Loyd-Fuster
Patent Assistant

Phone: 208/368-4522
Fax: 208/368-5606

DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP

2101 L Street NW • Washington, DC 20037-1526
Tel (202) 785-9700 • Fax (202) 887-0689

Writer's Direct Dial: (202) 828-2232
E-Mail Address: PowellW@DSMO.com



BY FEDERAL EXPRESS

**PRIVILEGED AND CONFIDENTIAL:
ATTORNEY-CLIENT COMMUNICATION**

Mr. Tongbi Jiang
c/o Lisa Boyer
Micron Technology, Inc.
8000 S. Federal Way
Boise, Idaho 83707-0006

Re: Proposed U.S. Patent Application
Serial No.: Not Yet Assigned
Title: DIE ATTACH CURING METHOD FOR SEMICONDUCTOR
DEVICE
Inventor: Tongbi Jiang
Your Reference: 98-956
Our Reference: M4065.0226/P226

Dear Tom:

Enclosed please find a second draft of Micron's patent application entitled "Die Attach Curing Method For Semiconductor Device." We have added information to the specification in response to your comments.

We are enclosing a signature copy of the above-referenced application herewith including a Power of Attorney by Assignee for execution by Michael L. Lynch. The Power of Attorney by Assignee requires Mr. Lynch to certify that he has reviewed the signed Assignment from the inventor. Please have the enclosed documents executed and return them to us at your earliest convenience. When we receive the executed documents, we will immediately file the application with the U.S. Patent and Trademark Office.

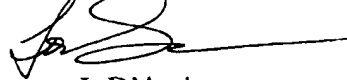
Mr. Tongbi Jiang
[REDACTED]

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ATTORNEY-CLIENT COMMUNICATION

Page 2

If you have any questions, please do not hesitate to call.

Very truly yours,



Thomas J. D'Amico

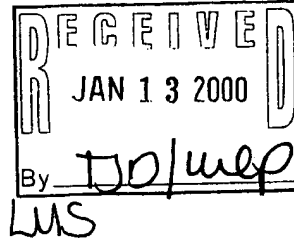
TJD/WEP/dgw
Enclosures



January 12, 2000

M4065.0226/P226

Tom D'Amico
Dickstein, Shapiro, Morin
& Oshinsky
2101 L Street N.W.
Washington, D.C. 20037



Re: Micron Docket # 98-0956
Your Ref. # M4065.226

Dear Tom:

Please find enclosed the following signature papers, which have been signed by the inventors and are ready to be filed with the Patent Office:

- 1) Declaration;
- 2) Assignment; and
- 3) Power of Attorney.

Please fax me a copy of the transmittal letter when this case is filed with the PTO. Feel free to let me know if you have any questions.

DATES DOCKETED

File Appl'n DOL
DUE: Jan. 19, 2000 (TX)
U:

Very truly yours,

Lisa Boyer
Lisa Boyer
Patent Assistant

Phone: 208/368-4797
Fax: 208/368-5606

FILING RECEIPT

OC000000004995529

**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**Address: ASSISTANT SECRETARY AND
COMMISSIONER OF PATENT AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
09/484,437	01/18/2000	2835	870	M4065.0226/P226	5	30	3

Dickstein Shapiro Morin & Oshinsky LLP
2101 L Street NW
Washington, DC 20037-1526

MAR 24 2000

TD/wep
ons

Date Mailed: 03/16/2000

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the PTO processes the reply to the Notice, the PTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).**

Applicant(s)

Tongbi Jiang, Boise, ID ;

Continuing Data as Claimed by Applicant**Foreign Applications**

If Required, Foreign Filing License Granted 03/16/2000

-

Title

Die attach curing method for semiconductor device

Preliminary Class

361

Data entry by : BATES, DIANA

Team : OIPE

Date: 03/16/2000

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

**LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15**

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 36 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Office of Export Administration, Department of Commerce (15 CFR 370.10 (j)); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

PLEASE NOTE the following information about the Filing Receipt:

- The articles such as "a," "an" and "the" are not included as the first words in the title of an application. They are considered to be unnecessary to the understanding of the title.
- The words "new," "improved," "improvements in" or "relating to" are not included as first words in the title of an application because a patent application, by nature, is a new idea or improvement.
- The title may be truncated if it consists of more than 600 characters (letters and spaces combined).
- The docket number allows a maximum of 25 characters.
- If your application was submitted under 37 CFR 1.10, your filing date should be the "date in" found on the Express Mail label. If there is a discrepancy, you should submit a request for a corrected Filing Receipt along with a copy of the Express Mail label showing the "date in."

Any corrections that may need to be done to your Filing Receipt should be directed to:

Assistant Commissioner for Patents
Office of Initial Patent Examination
Customer Service Center
Washington, DC 20231